

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

**Michelle CAREY et al.**

Serial No.: **09/254,339**

Art Group: **1713**

Filed: **March 5, 1999**

Examiner: T. Zalukaeva

Our File: **0359.1-1-1**

For: **STAIN RESISTANT WATER-  
BORNE COATING COMPOSITION**

Customer ID **25207**

**PRELIMINARY AMENDMENT**

**ACCOMPANYING A REQUEST FOR CONTINUED EXAMINATION UNDER 37**

**C.F.R. 1.114**

BOX RCE

Commissioner for Patents

Washington, DC 20231

Sir:

Please amend the above-identified patent application as follows and consider the appended remarks:

**In the Claims:**

Amend the Claims as follows:

1. (Five Times Amended) An aqueous coating composition, comprising an anionically stabilized dispersion polymerized from a carboxylic acid containing ethylenically unsaturated monomer selected from the group consisting of acrylic acid and methacrylic acid, said hydrophobic aromatic ethylenically unsaturated monomer being in the range of from 8 - 70%, a hydrophobic aromatic ethylenically unsaturated high Tg monomer selected from the group consisting of styrene and alpha methyl styrene, and an C<sub>2</sub> - C<sub>12</sub>

acrylate ester monomer whereby the relative proportions of ethylenically unsaturated monomers are selected such that the following Equation I is satisfied:

$$a = \frac{5 + b}{(c + d / 2.4)^2} \quad I$$

where  $a = 2 - 13$

$b$  = weight percent hydrophobic aromatic high Tg monomer with respect to all monomers

$c$  = weight percent acrylic acid with respect to all acrylic acid

$d$  = weight percent methacrylic acid with respect to all methacrylic acid

and whereby the polymeric dispersion has a maximum Tg of 30°C.

2. (Canceled)

3. (Reiterated) The aqueous coating composition of Claim 1, wherein the hydrophobic aromatic ethylenically unsaturated monomer is in the range of from 15-50%.

4. (Reiterated) The aqueous coating composition of Claim 1, wherein the hydrophobic aromatic ethylenically unsaturated monomer is styrene.

5. (Amended) An aqueous coating composition, comprising an anionically stabilized dispersion polymerized from a carboxylic acid containing ethylenically unsaturated monomer selected from the group consisting of acrylic acid and methacrylic

acid, a hydrophobic aromatic ethylenically unsaturated high Tg monomer selected from the group consisting of styrene, alpha methyl styrene and vinyl toluene and an C<sub>2</sub> – C<sub>12</sub> acrylate ester monomer whereby the relative proportions of ethylenically unsaturated monomers are selected such that the following Equation I is satisfied:

$$a = \frac{5 + b}{(c + d / 2.4)^2} \quad I$$

where  $a = 2 - 13$

$b$  = weight percent hydrophobic aromatic high Tg monomer with respect to all monomers

$c$  = weight percent acrylic acid with respect to all acrylic acid

$d$  = weight percent methacrylic acid with respect to all methacrylic acid

and wherein the polymeric dispersion has Tg 30°C maximum.

6. (Reiterated) The aqueous coating composition of Claim 1, wherein “a” in Equation I is in the range of from 2.5 to 9.5.

7. (Reiterated) The aqueous coating composition of Claim 5, wherein the weight percent of acrylic acid is greater than the weight percent of carboxylic acid monomer excluding acrylic acid.

8. (Reiterated) The aqueous coating composition of Claim 5, wherein the Tg of the polymeric dispersion is at least -15°C.

9. (Reiterated) The aqueous coating composition of Claim 8, wherein the Tg of the polymeric dispersion is in a range of from -5 to 30°C.
10. (Reiterated) The aqueous coating composition of Claim 5, wherein the particle size of the polymeric dispersion is a maximum of 200 nanometers (number average).
11. (Reiterated) The aqueous coating composition of Claim 10, wherein the particle size of the polymeric dispersion is a maximum of 150 nanometers.
12. (Reiterated) The aqueous coating composition of Claim 10, wherein the particle size of the polymeric dispersion is a maximum of 120 nanometers.
13. (Previously Canceled)
14. (Reiterated) The aqueous coating of Claim 23, wherein the low Tg polymer dispersion is non-ionically stabilised.
15. (Reiterated) The aqueous coating composition of Claim 23, wherein the low Tg polymer dispersion is as defined in Claim 1 such that vinyl toluene is included in Claim 1 as a further hydrophobic aromatic ethylenically unsaturated high Tg monomer.
16. (Reiterated) The aqueous polymeric dispersion of Claim 5.
17. (Reiterated) The aqueous polymeric dispersion of Claim 5, wherein the polymeric dispersion has a Tg greater than 30°C but not more than 60°C and wherein the weight majority of carboxylic acid containing ethylenically unsaturated monomer is acrylic acid.

18. (Reiterated) The aqueous coating composition of Claim 1, wherein "a" in Equation I is in the range of from 2.5 to 9.5.

19. (Reiterated) The aqueous coating composition of Claim 1, wherein the weight percent of acrylic acid is greater than the weight percent of carboxylic acid monomer excluding acrylic acid.

20. (Reiterated) The aqueous coating composition of Claim 1, wherein the particle size of the polymeric dispersion is a maximum of 150 nanometers.

21. (Reiterated) The aqueous polymeric dispersion of Claim 1.

22. (Amended) An aqueous coating composition, comprising an anionically stabilized dispersion polymerized from a carboxylic acid containing ethylenically unsaturated monomer selected from the group consisting of acrylic acid and methacrylic acid, a hydrophobic aromatic ethylenically unsaturated high Tg monomer selected from the group consisting of styrene, alpha methyl styrene, and vinyl toluene, and an C<sub>2</sub> - C<sub>12</sub> acrylate ester monomer whereby the relative proportions of ethylenically unsaturated monomers are selected such that the following Equation I is satisfied:

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where  $a = 2 - 13$

$b$  = weight percent hydrophobic aromatic high Tg monomer with respect to all monomers

c = weight percent acrylic acid with respect to all acrylic acid

d = weight percent methacrylic acid with respect to all methacrylic acid.

23. (Reiterated) The aqueous polymeric dispersion of Claim 22, comprising a blend of low Tg and high Tg aqueous polymeric dispersions wherein the polymer dispersion with low Tg has a Tg less than 0°C, the polymer dispersion with high Tg has a Tg of at least 25°C, and the volume ratio of low Tg to high Tg polymer dispersion is in the range of from 0.4:1 to 3:1.

0359.1-1-1

## REMARKS

Applicants wish to thank the Examiner for her time to discuss the case with Applicants' counsel on August 24, 2001. Reconsideration of the present application is respectfully requested in light of the above amendments to the application and the following remarks.

### Regarding the Claims

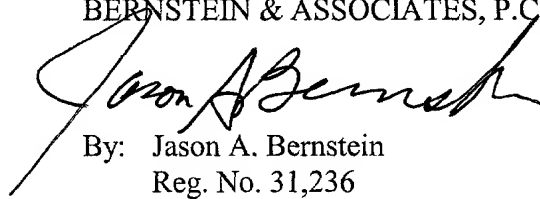
Independent Claims 1, 5 and 22 have been amended in accordance with the Examiner's suggestion to include the indication that the values "b", "c" and "d" are expressed as a relative number with respect to the entirety of the component. Further, in response to the Examiner's question, Applicants state that they used the relative weight percent in their calculations using the comparative examples in the traversed cited art

As such, Applicants respectfully submit that the claims as amended are neither anticipated by nor rendered obvious by the cited art.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

Applicant submits that the amended claims overcome the Examiner's rejections and objections and are in condition for allowance, and Applicant respectfully requests the same. Should the Examiner have questions or suggestions which will put this application in line for allowance, she is requested to contact the undersigned attorney.

Respectfully submitted,  
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Version with markings to show changes made

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23. (Reiterated) The aqueous polymeric dispersion of Claim 22, comprising a blend of low Tg and high Tg aqueous polymeric dispersions wherein the polymer dispersion with low Tg has a Tg less than 0°C, the polymer dispersion with high Tg has a Tg of at least 25°C, and the volume ratio of low Tg to high Tg polymer dispersion is in the range of from 0.4:1 to 3:1.